BEST PRACTICES FOR WATER QUALITY TRADING
JOINT REGIONAL STATEMENT

Discussion Guide, November 12th, 2013

This Discussion Guide is intended to provide definitions, context, analysis, and options for addressing various components of Baseline in water quality trading programs. It poses questions that will be discussed at the fourth interagency workshop. This document may reference other trading programs, examples, or documents. This document will be included in the workshop packet and posted online following the workshop.

2. Determining Baseline & Additionality Requirements

Baseline (the threshold a nonpoint source is required to meet before trading), and additionality (the idea that benefits credited from a project must be in addition to Baseline and the status quo) are two of the most challenging ~~complex~~ aspects of WQT programs. Overall, trading is just one, small—although important—part of a broader, long-term water quality strategy to reduce pollution from point and nonpoint sources. As such, Baseline and additionality policies should be structured in a way that promotes environmentally positive trading outcomes, while also providing room for trading to help a waterbody move toward water quality standard attainment.

The 2003 EPA Trading Policy ~~requires~~ advises that nonpoint sources meet "Baseline" requirements prior to trading. Where there is no TMDL, EPA has stated that "the Baseline for nonpoint sources should be the level of pollutant load associated with existing land uses and management practices that comply with applicable state, local or tribal regulations."[1] Put another way, EPA stated in its Trading Toolkit that Baseline is equal to "the pollutant control requirements that apply to a buyer and seller in the absence of trading."[2] In a basin where there is no TMDL, EPA is clear that Baseline is the applicable state, local and tribal regulations.[3] However, where there is a TMDL, neither the 2003 trading policy, nor federal TMDL regulations, nor in many cases state guidances provide the detail necessary to define field level load allocation (LA). As result the trading program manager is often left with having to fill in the information gaps outside of the TMDL itself, which because this process is outside of the TMDL process doing so may add additional risk as to if the baseline will be upheld if challenged. Additionally, there is also ~~there is a lack of clarity as to how Baseline is calculated at individual project sites. First, this is due in part to varying interpretations of load allocations (LAs). Second, this is influenced by the misperception that the 2003 EPA Trading Policy and the 2007 EPA Trading Toolkit state that Baseline is *equal* to LAs, when in fact they do not. Third, this~~ lack of clarity ~~stems from confusion~~ around time horizons for achieving TMDL objectives versus the thresholds nonpoint source must meet prior to trading. Finally, the sequencing of TMDL implementation is governed by state discretion as to when particular actions are required in order to meet long-term TMDL goals. ~~The legal and policy discussion surrounding these four important points is addressed in~~

[1] EPA, Trading Toolkit, at 5.
[2] *Id.* at 8.
[3] *Id.* at 8

Commented [Schary1]: The Policy is a guidance document, not a regulation so it cannot require anything.

Commented [BobR2]: This is very important if you are going to quote the text you do.

Commented [BobR3]: I think this may capture the author's main concern that the reader needs to know. Essentially as a trading program manager you are on your own, but Willamette is here to help.

Commented [Schary4]: This has not made the case yet that there are varying interpretations of Load Allocations. What is missing is the discussion that the TMDL has no authority on its own to require a Load Allocation to be met, so it relies on existing and new state and local regulations, as well as voluntary approaches, to implement the reductions specified by the Load Allocation. Often those regulations and voluntary approaches are insufficient over time to achieve the reductions needed.

Commented [Schary5]: Whose misperception?

Commented [BobR6]: Agree with Claire on her #4, #5, #6, #7, #8. There is no lack of clarity that the 2003 policy, handbook, and TMDL regulations do not provide or compel states to establish TMDL as needed for trading. It is therefore up to the state, and/or left to the trading program manager.

Commented [Schary7]: I don't think this discussion is very useful because it is splitting hairs on wording in an EPA guidance document, which is not the same as a regulation.

~~the attached Memorandum from The Freshwater Trust on Regulatory and TMDL-Derived Baseline ("Baseline Memo") – which should be read prior to reviewing the below Draft Best Practices on Baseline.~~

The Draft Best Practices in Section 2.1 discuss the implementation of Regulatory Baseline and TMDL-Derived Baseline in a trading program. In particular, Section 2.1.1 discusses how TMDLs may be implemented and developed so as to allow for easier calculation and implementation of TMDL-Derived Baseline at the site-specific level. Sections 2.1.2-2.2.3 also discuss~~es~~ how phased nonpoint source excess load reduction targets may be incorporated into TMDLs, including details related to implementation timing and sequencing, site-specific reductions and BMPs, and TMDL-Derived Baseline. Section 2.2 outlines several aspects of Regulatory Baseline and TMDL-Derived Baseline implementation at individual project sites, including (2.2.1) programmatic base year for establishing pre-project site conditions, (2.2.2) how Baseline can be expressed, (2.2.3) individual vs. group-level attainment of Baseline requirements, (2.2.4) sequencing of Baseline and credit generating activities, (2.2.7) additionality/business-as-usual at project sites, and (2.2.6) use of cost-share and conservation funding toward meeting Regulatory Baseline requirements.

1.1 Implementing Baseline in Trading

Baseline requirements are ~~can be~~ derived either from TMDL Las where a TMDL exists, or ~~as well as~~ from state ~~regulatory~~ requirements (statutes, rules, ordinances). In reviewing 10+ TMDLs in the Pacific Northwest, EPA approval checklists for over 30 TMDLs, and a number of state-specific laws and regulations, Willamette Partnership and The Freshwater Trust discovered that it is often difficult to determine which Baseline requirements apply at a particular site, and when those requirements apply to all? sites. Most TMDLs and state/local regulations were not designed with WQT in-mind, and so there is little-to-no guidance as to how to derive Baseline requirements in a way that acknowledges all of the sources of Baseline requirements, while at the same time allowing trades to occur right now.

1.1.1 Implementing/Developing TMDLs so as to Allow for Easier Calculation of TMDL-Derived Baseline

TMDLs that include different scenarios, different scales or timeframes for applying load reduction targets, and nonpoint source models that are sensitive enough to capture reach or group-of-landowner level changes can help provide the technical basis for setting Baseline requirements for trading. As one develops or revises a TMDL, it is important to consider the following questions as they relate to deriving TMDL-Derived Baselines from LAs:

- How are LAs modeled and completed? Are they given to individual sources, to groups of sources, or just an overall loading amount? Are LAs set to "0"?
- Does language in the TMDL conflate LAs given to nonpoint sources with the responsibility to remedy Excess Load, such that the TMDL-Derived Baseline question becomes unclear?

Commented [Schary8]: This memo does not help the discussion so it should not be included in this documents.

Commented [BobR9]: The memo pulls language out of context. For example it says 2003 policy says TMDL LA "or" state requirements. The actual context is to explain to the reader it can be one or the other, in which the next paragraph (page 5 of the PDF version) then explicitly says TMDL where there is TMDL, state and local if no TMDL.

Commented [Schary10]: My comments on these sections may lead to their deletion or 'repurposing' so this topic preview paragraph will need to be reworded. I also want this phrasing to be more clear that the recommendations coming from this document are not suggesting that TMDL policy and regulations be changed but that the recommendations are for areas where there is discretion on interpretation and implementation.

Commented [BobR11]: It is clear via 2003 policy that TMDL LA apply where a TMDL exist, or state requirements if no TMDL. The state is free to require more than the TMDL LA, which can become confusing I'm sure. It is not accurate to say the 2003 is unclear. TMDL if TMDL, state requirements if no TMDL. Very simple.

Commented [Schary12]: TMDLs would never get to that level of specificity, and I think you are really referring to Implementation Plans.

Commented [Schary13]: This is confusing and highlights how this is being presented from the wrong perspective. It should be rephrased to place emphasis on challenges water quality trading needs to overcome with how TMDLs, and especially TMDL Implementation Plans, are written and implemented, not that's TMDLs are causing problems for water quality trading.

Commented [Schary14]: This sentence is not useful since no one expected TMDLs and state regulations to be designed with WQT in mind. Instead, state what is needed to make water quality trading feasible – which is some way to translate the TMDL and its Implementation Plan to what is expected of an individual NPS and what are the applicable regulations.

Commented [BobR15]: I agree with Claire. I would just add that this is a missed opportunity simply tell the reader what information gaps need to be filled.

Commented [Schary16]: This is not a reasonable or feasible option, and should be deleted so that it is not misinterpreted or taken out of context.

Commented [Schary17]: Delete this for the same reason as above. I think what you really are asking is about the role of "reasonable assurance" in a TMDL. That merits a much longer discussion.

Commented [Schary18]: I don't understand this at all. I'm guessing that what you are asking is if the frequent description of the reduction amount (quantity or percent) needed to meet the Load Allocation confuse people as to what is the actual target? Since that has to be clear in the TMDL, what you are really trying to get at is that the unique challenge faced by water quality trading in interpreting how that reduction applies to an individual source, and what is specifically required.

- Are WLAs made more or less stringent based on nonpoint source controls in the basin?[4]
- How are a TMDL's reasonable assurances defined for meeting LA goals?
- What direction does the TMDL provide for TMDL-implementing agencies in terms of the reductions or types of actions, timing, and sequencing that the water quality agency expects will be included in TMDL implementation plans?

***Draft Best Practice – Considering TMDL-derived baseline requirements**: If trading is considered to be a possibility for meeting water quality goals in a watershed, it should be considered early on in TMDL development. This includes properly defining LAs and Excess Load, and clear statements about the role and timing of trading in implementing those TMDL goals.*

The best practices below are not intended to influence the entire TMDL development process, but to provide some ideas on how to interpret existing TMDLs, as well as how to better consider and prepare for the possibility of trading during the design, revision and implementation of TMDLs in the future.

1.1.2 Designing TMDL LAs to Help Implement TMDL-Derived Baseline at Site-Specific Level

As stated in the 2007 EPA Trading Toolkit, Baseline can and should be "derived from" the overall allowable LA amount in TMDLs. Assuming that LAs are thought of as "allowances" given to nonpoint sources—and not as all Excess Load caused by nonpoint sources—the next question is how to develop meaningful LAs in a TMDL such that implementing agencies can more easily derive Baseline requirements for individual sites. Assigning specific WLAs has been deemed within the authority of EPA,[5] and so doing the same for LAs might help guide TMDL-implementing agencies toward the development of clearer Baseline obligations at the site-specific level. By knowing what amount of loading is generally allowable for a type of source, it may help implementing agencies determine how much loading needs to be addressed in a TMDL implementation plan, and on what timeframe.

***Draft Best Practice – Identifying nonpoint source load**: Many TMDLs establish overall or categorical LA amounts that cannot be easily divided into site-specific amounts. The overall allowable LA amount identified in a TMDL for nonpoint sources can be constructed in at least three ways: 1) as an overall amount provided to all nonpoint sources; 2) as amounts for different nonpoint source sectors~~; or 3) as amounts given to individual nonpoint source sites (similar to the way WLAs are divided amongst point sources)~~. Regardless of the scale of LAs—overall, sector-specific, or individual sites—TMDLs should explicitly note the amount of load that the TMDL is giving to nonpoint sources so that the site-specific*

Commented [Schary19]: I think you are really asking about the role of the Reasonable Assurance section in addressing the likelihood that NPS controls will be implemented, rather than how the model accounts for the type of NPS controls in determining how much to allocate to point sources.

Commented [Schary20]: The short answer to this is that what's the Implementation Plan is for. I think what you mean is what is required for Reasonable Assurance, and the short answer is not much.

Commented [Schary21]: I don't think the TMDL is supposed to provide the DMAs that direction – that's what the Implementation Plan is for. The TMDL identifies the sources of the pollutant loadings and specifies how much needs to be reduced from what sources to achieve the water quality standard.

Commented [Schary22]: Setting the right LA targets is what a TMDL is supposed to do, and not a unique need for water quality trading. The role and timing of trading is better addressed in the Implementation Plan, although the TMDL needs to mention the that WLA and LA may be adjusted by trades authorized in NDPS permits. I don't think this draft is coming up with a realistic set of recommendations for what the TMDL itself can do to better support trading – except perhaps expressing the WLAs and LAs in the same units, such as reduction of kilocalories needed by each source or source category to meet the numeric limit. And that didn't even get inlcuded in the recommendations!

Commented [BobR23]: Quotations strike me as a carryover from the memo. It is sufficient to say derived without it appearing to be some sort of previously unnoticed nuance.

Commented [BobR24]: Again agree with Claire. "Allowances" in other contexts is a legal right of sort. LA are nowhere the same.

Commented [Schary25]: This is not a feasible option – there is no authority for this in the TMDL - and should not be included. Instead, the question is back to how to identify the correct baseline to apply to determine what surplus and therefore is tradable.

Commented [Schary26]: Absolutely not feasible and should be deleted.

[4] "If Best Management Practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs." 40 C.F.R. 130.2(i).

[5] American Farm Bureau Fed'n v. U.S. EPA, No. 1:11-CV-0067, at *55 (M.D. Pa. 2013) ("To merely set a number, and then let the states, permit writers, and other groups within each state "duke it out" would not only be impractical, but would also be inconsistent with the CWA's foundational principle, which is that the burdens of eliminating pollution in the Nation's water is one to be shared among federal, state, and local authorities.") (citing Anacostia Riverkeeper v. Jackson, 798 F.Supp.2d 210, 250 (D.D.C. 2011)).

Baseline inquiry is not complicated by uncertainty and ambiguity.

Commentary: Unlike WLAs, LAs are not typically divided between all sources in the watershed, and so the LA amount included in the TMDL is typically cumulative for all nonpoint sources. If a TMDL is written such that it can be interpreted as requiring all nonpoint source contributors to collectively achieve the watershed LA before a credit may be generated (as would be required under the "Excess Load" approach), the majority of trading opportunities would be eliminated.6 ~~If possible, TMDLs should identify specific loading amounts that nonpoint sources can discharge. However, if TMDL drafters cannot do so, the TMDL should clearly state that certain (or all) nonpoint sources receive a "0" load allocation.~~

1.1.3 Establishing Phased Nonpoint Source Excess Load Reduction Targets in a TMDL: Implementation Timing and Sequencing, Site-Specific Reductions and BMPs, and TMDL-Derived Baseline

In addition to clearly identifying the allowable discharges given to nonpoint sources, a TMDL Implementation Plan may provide important guidance as to the timing and sequencing of more stringent TMDL-Derived Baseline requirements, among other requirements aimed at improving a waterbody's health over the longer term. Currently, many TMDL Implementation Plans lack clarity as to when desired future conditions will be attained, and what sequence of actions (and when) will be necessary to reasonably assure progress toward water quality standards over the longer-term. This often leads to difficulty in TMDL implementation, and confusion as to which entity is going to address what amount of the problem, and by when. As a result of this lack of specificity, long-term optimal conditions are sometimes assumed to be current requirements that must be met now prior to generating credits.

TMDLs may, however, provide specific direction as to what water quality objectives should be met, and when. Some states rely on state law provisions to include such deadlines.[7] The CWA requires that TMDLs "shall be established at a level necessary to implement the applicable water quality standards [,]"[8] but it does not require that TMDLs be completely implemented within a specific timeframe (unlike technology-based effluent limit standards[9]). ~~The CWA thus provides TMDL~~

[6] *See* Montana DEQ, Response to Comments on Montana's Draft Policy on Nutrient Trading, at 1, Comment 2 Response (2011), *available at* http://deq.mt.gov/wqinfo/NutrientWorkGroup/PDFs/DraftTradingPolicyRespComm10_11.pdf ("Defining 'Baseline' so that all nonpoint source contributors need to achieve (collectively) the watershed load allocation before a credit may be generated would eliminate the majority of trading opportunities and greatly reduce the effectiveness of this policy.").

[7] *See, e.g.,* RCW 90.48.080 ("It shall be unlawful for any person to throw, drain, run, or otherwise discharge into *any of the waters of this state*) (emphasis added). Washington Dep't of Ecology authority to regulate nonpoint sources under this law was recently upheld by the Washington Supreme Court. Lemire v. Washington, No. 87703-3 (2013). Likewise, all dischargers are subject to regulation under California state law. Cal. Water Code § 13260(a)(1). On the other hand, the federal CWA definition of "point source" specifically excludes "agricultural stormwater discharges and return flows from irrigated agriculture." 33 U.S.C. § 1362(14).

[8] 33 U.S.C. § 1313(d)(1)(C).

[9] *See* 33 U.S.C. § 1311(b). TMDL-based targets are not constrained by the shorter timeframes associated with meeting the technological goals of the CWA. Longview Fibre Co. v. Rasmussen, 980 F.2d 1307 (9th Cir. 1992) (noting that "the 'timetable for achievement of objectives' limitations of section 1311 do not apply to section 1313 TMDL effluent

Commented [Schary27]: With the deletion that I've suggested, this becomes a useless recommendation. The problem that it's trying to address is not correctly identified by this solution. It's really about how to identify the applicable baseline requirement and turn that into a quantifiable amount. That is more feasible and realistic without getting into the TMDL allocation process.

Commented [BobR28]: Claire. MD sort of does this by defining, with a model, the lbs of runoff at a field level that the NPS must first meet. Need to double check, but MD is close to doing this. CLAIRE's RESPONSE: I just read an article today that MD withdrew a proposed regulation that would require farmers to do soil testing to show their phosphorus load coming off their field – probably the first step in what Bob is talking about, and now that first step isn't going to happen anytime soon. Here's the first sentence in that story from the Daily Environment Report 11/20/13: "The Maryland Department of Agriculture withdrew a proposal to tighten the agency's restrictions on phosphorus fertilization on farms in 2014, three months after it withdrew an emergency rulemaking that would have implemented the rule almost immediately."

Commented [Schary29]: Again, this is not feasible and should be deleted as a discussion point. The statement about assigning a zero Load Allocation would need to be scientifically justified – i.e., show that reductions from only point sources are sufficient to meet water quality standards – but otherwise is not politically acceptable. The discussion should instead be directed at the issues with Reasonable Assurance and Implementation Plans.

Commented [Schary30]: Awkward and not clear what you mean. The TMDL is the assessment of what's needed to meet water quality standards, so its targets shouldn't be described as something so wishy-washy. Again this shows confusion as to what can be done within the TMDL document and what should or could be addressed in the Implementation Plan.

Commented [Schary31]: This sentence is unclear, and also confuses what a TMDL does (the reduction targets needed to attain water quality standards) and what an Implementation Plan does (where timing and phased reduction goals can be specified).

~~drafters the authority to establish a series of phased nonpoint source reduction goals in TMDLs, as well as the authority to identify appropriate Baseline requirements at various intervals throughout the TMDL implementation period (which may stretch over decades).~~

Draft Best Practice – Establishing Phased Nonpoint Source Excess Load Reduction Targets in a TMDL: *TMDLs often identify desired future conditions after full implementation of a TMDL. Although TMDLs may specify a series of watershed-wide nonpoint source reduction goals—including TMDL-Derived Baseline—aimed at moving a watershed toward attainment of water quality standards over time, many TMDL Implementation Plans do not effectively ~~translate~~ explain how to achieve the desired future condition (reductions needed to meet the water quality standard) from~~to~~ current site-specific requirements. This lack of translation makes it difficult for TMDL implementing agencies to derive appropriate site-specific Baseline (and the sequencing of those Baseline amounts over time), and to judge the efficacy of designated management agency implementation plans.*

TMDL Implementation Plans should specify the reductions or types of BMPs, timing, and sequencing ~~that the relevant water quality agency expects will be included in TMDL implementation plans~~. As it relates to trading, the relevant water quality agency should provide clear direction as to when it expects ~~those goals~~the TMDL's reduction targets (Waste Load Allocations and Load Allocations) to become TMDL-Derived Baseline requirements at particular types of sites, although caution should be taken not to convert TMDL nonpoint source reduction goals into site-specific Baseline requirements too quickly, or at too high a level, or else trading may quickly become cost prohibitive for point sources. This direction would provide designated management agencies with the information necessary to include appropriate Baseline requirements in their implementation plans, and the public with clear guideposts for assessing TMDL implementation progress.

An evaluation of progress should be conducted at defined intervals in the TMDL's implementation to assess progress toward meeting pollution reduction targets and make adjustments as needed. If watershed-wide nonpoint source reduction goals are not met, TMDLs should be reviewed and revised, according to the applicable state policy or regulation. ~~could be written such that other actions are triggered. For example, 1) TMDLs could reduce point source WLAs on a schedule; 2) TMDLs could reallocate the human use allowance in a more restrictive way; or 3) states could more heavily regulate nonpoint sources.~~

Commentary: Over time, a TMDL could require nonpoint source reduction goals in order to move a waterbody toward attainment of water quality standards. ~~EPA has discussed this possibility in the Chesapeake Bay TMDL, specifically calling for a schedule of reduced allocations to point sources depending on whether nonpoint sources obtain particular reduction goals~~.[10] Florida law regarding TMDLs also provides space for phased TMDL implementation.[11] In the Shelter Island TMDL (San

limitations"); NEDC v. Oregon DEQ, No. 9905-05144, 2000 WL 35562955, at *17 (D. Or. 2000) ("section 1311 compliance deadlines do not apply to section 1313 TMDL's").

[10] EPA, Chesapeake Bay TMDL, at § 7 (2010).

[11] Florida Statutes § 403.067(7)(a)(1) ("In developing and implementing the TMDL for a water body, the department … may develop a basin management action plan that addresses some or all of the watersheds and basins tributary to the

Commented [Schary32]: I don't think EPA attorneys would like this sentence because it is an opinion, not necessarily a logical conclusion. Also, I think we do not put timelines and phased reduction goals in TMDLs, but states can put them in implementation Plans.

Commented [Schary33]: This phrase is unclear – you mean the applicable federal, state or local regulations or funding-related requirements to a particular site?

Commented [BobR34]: I completely agree on the problem statement; the TMDL process and its accompanying components are often insufficient for trading.

But…as a reader it is tiring to be reminded of this over and over. Editorially, recommend moving all the failings to the front (plenty to go around) and proceed to use positive language as to solutions and positive language as to how PS and NPS benefit.

Commented [Schary35]: I don't understand what the issue is here.

Commented [Schary36]: I think I understand what you're trying to get at here, which is recommending a phased approach to implementing the reductions needed to meet the Load Allocation, and allowing that interim reduction target be used as the baseline for calculating a credit. Why don't you state it more directly? However, there is still some legal/policy uncertainty as to whether or not that is allowed so that should be acknowledged if it Is going to be recommended.

Commented [Schary37]: This is not feasible, but TMDLs can get revisited and revised, and this happens according to whatever policy a state has in place.

Commented [BobR38]: I find "commentary" to be distracting. How about calling it "More Details" Commentary strikes me as heresy, or highly opinionated. Just a suggestion.

Commented [Schary39]: This sentence is unclear. "Over time" may be at the wrong place in the sentence and the rest of it doesn't make sense except as a statement that TMDLs set reduction target to meet water quality standards, but TMDLs of themselves cannot require NPS to do anything. Again, I think you are suggesting the use of a phased-in approach to meeting the Load Allocation.

Commented [Schary40]: I need an EPA attorney familiar with the Chesapeake Bay TMDL to look at this sentence, because I think what is being referred to was done under specific authority granted to EPA to establish an Accountability Framework that is mentioned in the Reasonable Assurance section of the TMDL but is not part of the TMDL itself. Until I can get them to look at it, please delete the sentence.

Diego), the California Regional Water Quality Control Board set phased reduction goals for various types of copper polluting sources over a seventeen-year period (a two-year orientation, followed by three five-year reduction phases).[12] The Shelter Island TMDL does not appear to reallocate responsibility among different categories of sources if particular source categories are unable to meet their interim reduction goals. Careful consideration should occur prior to imposing stricter limits on point source categories based on the non-compliance of nonpoint source categories. In watersheds where point sources are the major contributors of pollution, phased reduction goals (and phased increases in Baseline requirements) may be less appropriate. In those cases, strategies that reduce point source pollution faster may be more desirable.

Challenges with phased nonpoint source reduction goals in the TMDL include: A) setting reasonably achievable milestones at specific time intervals as part of a TMDL process is likely time-consuming and complex, and would require more extensive TMDL implementation planning that is based on reasonable adoption rates/supply chain development, enforcement capacity, and the ability to track progress against goals; B) LA, WLA, and HUA values in the TMDL may need to be adjusted in the future based on actual achievement of reduction milestones (which also might raise questions of equity from point sources if they are forced to carry more of the excess load problem should nonpoint sources fail to perform[13]); and C) point sources that would consider investing in green infrastructure may have an incentive to instead choose a known and statically-priced grey technology option if they know they may have to pay for more credits over time (especially if tighter point source control is dependent on nonpoint source achievement of reduction goals). For some point sources, a phased Baseline may therefore create the additional uncertainty that it may still need to install technology at some point in the future because the cost of trading will become prohibitive and uncertain. This may be of particular concern for some of the smaller wastewater utilities that may not have the financial flexibility or incentive to invest in credits that may be used for just one credit cycle (e.g., if the buyer reverts to a technological solution in a later permit cycle because that option becomes cheaper than purchasing more credits).

On the other hand, increases in TMDL-Derived Baseline levels (based on guidance from TMDL reduction goals) could incentivize both point and nonpoint sources to engage in trading at an earlier juncture because they are able to create more credits. In contrast, a project generating credits at a later point may have to retire more credits or install more BMPs in order to meet Baseline requirements. Nonpoint sources who are not currently capable of trading due to other land

Commented [Schary41]: Careful consideration of what factors? It starts with the modeling and then also what water quality standards require the limit to be in the permit.

Commented [Schary42]: This is really saying that the TMDL would need to be revised, so it's a different challenge than the others and is getting far from how it relates to trading issues.

Commented [Schary43]: This sentence is confusing, especially "increases in TMDL-derived baselines." Are you talking about the TMDL being revised and changing the amount in the Load Allocation, or the phased-in baseline idea changing the starting point from which a credit is calculated that could reduce the amount of credits available from projects being started later?

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water body. Such plan … *may provide for phased implementation of these management strategies to promote timely, cost-effective actions as provided for in s. 403.151*") (emphasis added).

[12] California Regional Water Quality Control Board, San Diego Region, Resolution No. R9-2005-0019, at 3-4 (2005), *available at* http://www.waterboards.ca.gov/sandiego/water_issues/programs/watershed/docs/swu/shelter_island/2005_0019.pdf.

[13] The statute and regulations do not discuss equitable considerations, but recent case law discussing TMDL implementation has noted this as an important consideration. *See* Am. Farm Bureau Fed'n v. U.S. E.P.A., No. 11-CV-0067, 2013 WL 5177530, at *35 (M.D. Pa. 2013) (discussing the equitable distribution of the burden of reducing pollutant loads and questioning the practicality of "pin[ning] the hopes of attaining the statutorily-mandated goal of achieving water quality standards on the three tidal states [and not recognizing the impacts of upstream states] would not only be inequitable, but also impractical and likely impossible.").

encumbrances or obligations may be forced to retire a larger percent of their credits as a pre-requisite to trading.

Ultimately, states and EPA would need to develop and use systems that track and review progress toward TMDL goals in quantifiable terms throughout the watershed. Regulators need a robust set of data to identify appropriate adaptive management actions, and to determine whether it is necessary to change water quality standards or use designations. Thus, this approach requires development of systems to track and account for the reductions that nonpoint sources achieve over time.

Commented [Schary44]: This is something that is good to do even in the absence of trading, and could or should be addressed in the TMDL Implementation Plan.

1.2 Details Related to Regulatory Baseline and TMDL-Derived Baseline at Individual Project Sites

This section discusses: (i) programmatic base year for establishing pre-project site conditions, (ii) how Baseline can be expressed, (iii) individual vs. group-level attainment of Baseline requirements, (iv) sequencing of Baseline and credit generating activities, (v) additionality/business-as-usual at project sites, and (vi) use of cost-share and conservation funding toward meeting Regulatory Baseline requirements. These principles generally apply in both the Regulatory Baseline and TMDL-Derived Baseline contexts.

Commented [BobR45]: Excellent.

1.2.1 Establishing Programmatic Base Year for Calculating Net Uplift at Project Sites

Draft Best Practice – Trading program base year*: Pre-project site conditions should be documented for each project in order to calculate Net Uplift. This "base year" may be set as the date a landowner enrolls in the trading program. However, if a trading program seeks to reward early action, the program may approve a "look back period" that establishes base year as the date the TMDL is issued, or the date a trading program is approved. If the base year is a point in the past, projects completed between the base year and the inception of the trading program must demonstrate conformity with all trading program requirements in order to be eligible to sell credits.*

Commented [Schary46]: This may be difficult to implement if the early trade didn't know what the trading requirements were going to be. Consider modifying it to say "conformity with important trading program requirements" so that some flexibility is available.

Commentary: Trading programs vary as to the date after which implemented BMPs become eligible to generate credits (i.e., the "base year"). The easiest and most straight-forward approach to base year is to establish pre-project site conditions at the time an individual landowner enrolls in an approved trading program.

The other options address circumstances in which landowners may have implemented beneficial practices prior to the beginning of a trading program, and now seek to sell those credits to buyers participating in the trading program. Programs may thus "look back" to a prior date as the base year.

One look-back approach involves counting only those BMPs installed after the effective establishment of a trading program in the watershed. This approach may disincentivize early adoption of BMPs (e.g., farmers may choose not to implement or continue BMPs leading up to a new TMDL or renewed NPDES permit with trading included, hoping instead to implement those practices once the trading program is in place to generate credits). Another approach is to look back to the year a TMDL was implemented, and set that as the base year. A look-back period can maintain the incentive for early BMP adoption by allowing documented improvements in practices to generate credits when they are implemented within a fixed number of years of a trading program's

establishment. The Ohio Basin program uses this approach.[14] Moreover, Maryland allows credit generation for any non-structural BMP implemented on an annual cycle (e.g., cover crops), even if that BMP was used prior to signing a TMDL.[15] This approach is intended to prevent landowners from stopping beneficial practices as a way to generate more credits. This approach is simple if the TMDL was recently published, but is less desirable if the TMDL was approved a number of years prior. On the other hand, this approach may provide the appearance that credit purchasers are simply buying restoration that already occurred, but that is now being repackaged as a "trading" solution. Moreover, there is concern that this approach may not produce new, additional benefits.

Commented [Schary47]: Another issue is whether or not credits are calculated in the same way and trading ratios were applied – so there will be other differences that need to be considered in this decision.

1.2.2 Expressing Baseline Requirements

Draft Best Practice – Expressing baseline requirements*: Baseline requirements can be expressed as A) an extra amount of load that must be reduced by a nonpoint source at a site (expressed as a % of the total overall load, or as a numeric amount); B) as a total amount of extra credits that must be purchased by a point source; or C) a minimum set of BMPs or actions that must be installed at a site. The expression of Baseline should be outlined in regulations, the permit and/or the TMDL, to the extent possible.*

Commented [Schary48]: We don't know where the best place is to state the baseline requirement for credit calculation, so I think it's premature to recommend these potential locations. The TMDL Implementation Plan may be the easiest place we can identify for certain.

Commentary: Baselines are expressed in a variety of ways across trading programs because they draw from a variety of state and local regulations, and sometimes from TMDLs. Some programs require the adoption of a minimum set of BMPs (e.g., a farm plan or filter strips) prior to allowing a nonpoint project to generate credits, whereas other programs require nonpoint sources to generate a percentage of pollution reduction (e.g., 20% reduction in nutrient loading) prior to allowing that nonpoint source to sell credits. Following are the pros (+) and cons (-) associated with different expressions of Regulatory Baseline.

- *"Technology-Based" (Minimum BMP(s) as Baseline)*: Virginia,[16] Pennsylvania,[17] and Colorado[18] express Baseline this way:

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[14] *See* EPRI, Pilot Trading Plan 1.0 for the Ohio River Basin Interstate Water Quality Trading Project, App. E-4, § 4.B (2009), *available at* http://wqt.epri.com/pdf/ORB%20Trading%20Plan%208-1-12%20final.pdf (noting 3-year look-back period for establishing Baseline conditions for agricultural nonpoint source credit generators).

[15] *See* Maryland Dep't of Agriculture, Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed, Phase II – A Guidelines for the Generation of Agricultural Nonpoint Nutrient Credits, at 11 (draft 2008) ("Credits can be generated from agronomic nutrient reduction practices, that do not count towards the baseline requirements, Agronomic practices reduce or minimize surface, groundwater or air emissions, such as; manure injection, reductions in nitrogen fertilizer application, precision agriculture, cover crops, no-till, etc. These are considered an annual practice for the year they are generated, regardless of what year the practices were first initiated.").

[16] Virginia Dep't of Environmental Quality, Trading Nutrient Reductions from Nonpoint Source Best Management Practices in the Chesapeake Bay Watershed: Guidance for Agricultural Landowners and Your Potential Trading Partners, at 3–5, *available at* http://www.deq.virginia.gov/Portals/0/DEQ/Water/PollutionDischargeElimination/VANPSTradingManual_2-5-08.pdf ("You are presumed to meet the baseline level of nutrient reduction if you implement all the following BMPs that are applicable to your operation" including soil conservation, nutrient management, cover cropping, livestock stream exclusion, riparian buffer installation).

[17] Pa. Code ch. 96.8(d)(3)(A)-(B).

[18] Among other options, the Colorado policy lists implementation of BMPs as a mechanism for satisfying nonpoint sources baseline. *See* Colorado Dep't of Public Health and Environment, Water Quality Control Division, Pollutant Trading Policy § VIII (2004).

- (+) BMPs are implemented at all sites where trading is to take place. This works well when required BMPs are defined in TMDL implementation plans and/or state law/regulations, where BMP efficiency is consistent throughout the watershed, and adoption is likely;
- (+) Rewards landowners who have already taken beneficial action in that Baseline may have already been met for those landowners;
- (+) Ensures that important, but otherwise costly, BMPs are implemented rather than just the most cost-effective or easy to implement BMPs;
- (-) Requires installation of standard BMPs at all project sites, regardless of unique site characteristics, or the actual benefit that BMP will generate at a site;
- (-) Can reduce flexibility for farmers to design BMPs to reduce pollution and meet the needs of their operations; and
- (-) Time-consuming and subjective to identify and track minimum BMP installation and performance thresholds at each project site (would require significant on-the-ground resources that may prove a hindrance to scaling programs).

- *"Performance-Based" (% Load Reduction Target at a Nonpoint Source Site as Baseline)*: Maryland and Pennsylvania express Baseline this way in guidance and regulations, respectively.[19]
  - (+) Since reduction targets are in the same units as TMDLs, it is easier to track progress from WQT in the same metrics and targets as used to develop TMDLs;
  - (+) When quantifying credits from site, it is easier to separate Baseline from additional credits (otherwise, the analysis must include calculating/modeling impacts of each Baseline BMP at each site—which has potentially significant resource impacts on permittees and project developers);
  - (+) Provides more flexibility to project developers/credit generators in how they achieve pollution reductions. Quantifiable targets are more certain because the amount to pay or credits to produce is a known extra increment;
  - (+) Expression in quantifiable amounts allows for easier connection of reductions back to targets in the TMDL;
  - (+) Expression at the nonpoint source site level suggests that individual nonpoint source project developers are making contributions to Baseline requirements (thus reinforcing the notion that nonpoint sources are carrying their fair share of the burden);
  - (-) High priority BMPs may not be implemented in favor of BMPs with the lowest cost per unit of the target pollutant removed; and
  - (-) Using absolute load amounts may introduce issues of equity because it may be far easier for "late adopters" to meet the required reduction than "early adopters" who have already taken actions. The Chesapeake TMDL is somewhat unique in that it sets specific load reduction targets by reach, supporting a percent reduction approach to Baseline.[20]

Commented [Schary49]: This isn't necessarily a negative, since presumably the BMP was selected because it is effective for most sites. The next bullet makes the intended point better, I think.

Commented [Schary50]: Not sure why this is a negative – isn't it a necessary part of trade verification, certification & registration, so doing it for required BMPs shouldn't be a bad thing. Or else I don't understand your point.

Commented [Schary51]: This needs more explanation because the bullets below refer to specific quantities being calculated – I don't understand how the % load road reduction target is being applied here.

Commented [BobR52]: Did not see this initially. This is what I mentioned earlier. MD uses a computer model to estimate field loads, and each field has a target/baseline. CLAIRE'S RESPONSE: Look for Daily Environment Report article 11/20/13 that says it was withdrawn, for now.

[19] Pa. Code ch. 96.8(d)(3)(C) (requiring nonpoint sources to either install certain minimum BMPs, or create an additional 20% reduction prior to being able to sell credits); Maryland Dep't of the Environment., Policy for Nutrient Cap Management and Trading in Maryland's Chesapeake Bay Watershed, § 4.1 (2008) ("The Department will require a 5% retirement ratio applied to each point-source generated credit. This ratio may be adjusted over time.").

[20] U.S. EPA, Chesapeake Bay Total Maximum Daily Load for Nitrogen, Phosphorus and Sediment § 9.1 (2010), *available at* http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/CBayFinalTMDLSection9_final.pdf (noting load reduction targets for all 92 Chesapeake Bay segments); *id.* at App. Q, *available at*

- % Load Reduction Target for Overall Trading Program as Baseline:
  - (+) May be easier to quantify Baseline obligation for purchasing point source entity (e.g., express as an extra % of the overall reduction amount being purchased).
  - (-) Expression at the nonpoint source site level suggests that individual nonpoint source project developers are making contributions to Baseline requirements, but this nexus is lost if expressed as a watershed-wide goal.

1.2.3 Individual vs. Group-Level Attainment of Baseline Requirements

***Draft Best Practice – Use of individual or group-level baseline requirements**: An individual project developer should be able to generate credits upon meeting his/her own Baseline requirements, independent of the actions of neighboring landowners in the relevant watershed. Where possible, trading programs should incentivize grouped implementation of BMPs in a watershed (e.g., through reduced ratios for collective action, increased availability of cost share to meet Baseline, etc.).*

Commented [BobR53]: Interesting. Good.

Commentary: In a review of trading programs around the Chesapeake, many programs allow individual landowners to generate credits when their individual Baseline requirements have been met[21]. It may not be fair to predicate credit-generation eligibility (i.e., Baseline requirements) on the willingness of all proximate landowners to participate in a program. Nonetheless, although required group action may create barriers to entry, it may make sense to incentivize group action as much as possible via mechanisms such as reduced trading ratios and Baseline requirements, and/or additional access to cost share funding.

1.2.4 Sequencing of Baseline and Credit Generating Activities

***Draft Best Practice – Sequencing of meeting baseline requirements**: Project developers can meet their Baseline requirements simultaneous to generating credits.*

Commented [Schary54]: This recommendation seems duplicative of (or at least very similar to) 2.2.2 - Expressing Baseline Requirements

Commentary: Project developers can meet their Baseline requirements simultaneously with the actions needed to generate credits (as opposed to first implementing the BMPs to meet Baseline and then later implementing the BMPs to generate credits). For example, this would allow a project developer to implement a set of BMPs that both meet and go beyond Baseline to generate credits.

1.2.5 Additionality and Business-as-Usual at Project Sites

***Draft Best Practice – Business-as-usual**: Baseline requirements address many of the concerns regarding additionality. Some trading programs may choose to define more criteria to ensure creditable projects are going beyond "business-as-usual" (e.g., not counting BMPs that are already customary to the industry, or that were already planned because of immediate cost savings for the operator).*

Commented [BobR55]: As a point of note, in an earlier section you essentially argued that having to meet multiple baselines defined by different authorities causes confusion.

I do make a larger point here, which is I do not think TMDL baseline versus state/local baseline is at all confusing, EPA policy is clear, and additionally any circumstance that goes beyond TMDL baseline is welcome on the part of the state or trading program manager.

Thus, the initial framing of baseline as confusing and conflicting is I think of limited value. Lack of sufficient detain within TMDL, state, and/or local requirements is the true source of confusion.

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http://www.epa.gov/reg3wapd/pdf/pdf_chesbay/FinalBayTMDL/AppendixQ_AnnualTMDLs_final.xls (providing detailed annual WLAs and LAs).

[21] *See* World Resources Institute, Comparison Tables of State Nutrient Trading Programs in the Chesapeake Bay Watershed, at 11, Tbl. 7 (2011), *available at* http://pdf.wri.org/factsheets/comparison_tables_of_state_chesapeake_bay_nutrient_trading_programs.pdf.

Commentary: Business-as-usual criteria for determining additionality are intended to prevent credits from being generated from actions that would have occurred without trading because they are a part of industry norms or because they represent sufficient cost savings to the landowner such that the landowner would be incentivized to implement a BMP without trading. In WQT programs, Baseline requirements may more than cover "business as usual" criteria. Business-as-usual definitions could be established for particular watersheds within a TMDL. Using business-as-usual criteria to determine additionality can be difficult to define, track and verify.

1.2.6 Use of Public Dollars Dedicated to Conservation to Satisfy Baseline Requirements

***Draft Best Practice – Allowable funding sources to meet baseline requirement**: Project developers may use public dollars dedicated to conservation or any other source of funding to help meet Baseline requirements or other watershed-wide nonpoint source reduction goals in the TMDL. Where public dollars dedicated to conservation are used, the amount and purpose of those funds need to be disclosed as part of the credit issuance process. Actions funded with "public dollars dedicated to conservation" may not be used to generate credits for compliance.*

Commentary: Many programs allow for the use of public funds dedicated to conservation (defined in Section 6.3 of the Draft Best Practices) to meet Baseline requirements.[22] Cost share funds such as federal Farm Bill programs, EPA section 319 grants, and state sources are routinely used to help nonpoint sources reduce pollution and meet conservation goals. USDA regulations appear to allow its funds to be used to meet Baseline or other requirements.[23] If public cost share is used to meet Baseline, that information should be available so the credit buyers, agencies, and others may verify that public dollars dedicated to conservation are being used to meet Baseline only and not to generate credits.

Commented [Schary56]: This recommendation is not consistent with the commentary below that says that USDA regs allow its funds to be used to meet Baseline requirements. It needs to be written more precisely to capture what is really meant and to avoid misinterpretation. Also, shouldn't there be a recommendation about funding that point sources receive that they use to meet water quality standards or be in compliance with their WLA, such as SRF or grants that support green infrastructure?

Commented [BobR57]: EPA policy leaves it up to funder to decide, in which 319 as a funder does not allow for generating additional revenue (actually, there is nuance in the full truth).

My point here is that EPA's 2003 policy does not forbid, thus I think Willamette Partnership may need to express its opinion that credits cannot be generated as its recommendation (perfectly valid), and why.

[22] *See id.* (noting that Maryland, Pennsylvania, Virginia and West Virginia allow cost-share funds to meet Baseline).
[23] *See, e.g.,* 7 C.F.R. § 1466.36 ("NRCS recognizes that environmental benefits will be achieved by implementing conservation practices funded through EQIP, and environmental credits may be gained as a result of implementing activities compatible with the purposes of an EQIP contract."); 7 C.F.R. § 1410.63 (similar provision for CRP).